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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,078	12/14/2001	John William Stayt JR.	Stayt 53	8945

7590 03/09/2005

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EXAMINER	
PAYNE, DAVID C	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,078	JOHN WILLIAM STAYT JR.	
	Examiner	Art Unit	
	David C. Payne	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 5, 8, 9, 12-14, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 5, 8, 9, 12-14, and 21 recite the limitation "secondary control system" in the body of the claim. There is insufficient antecedent basis for this limitation in the claim. The claims make no reference to any sort of primary control system, which must by necessity exist before a secondary control system.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7, 9, 12, 16, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee US 6028697 A (Lee).

Re claim 1, Lee disclosed,

A control system comprising: an optical filter (212 of Figure 3) including at least one filter element; an optical amplifier (210 of Figure 3) coupled to the optical filter; an

optical sensing device (216 of Figure 3) coupled to the optical filter; and, a secondary control system (224 of Figure 3) coupled to the optical sensing device and the optical filter.

Re claim 7, Lee disclosed, wherein the optical sensing device monitors the output current of the at least one filter element, see col./lines: 7/45-50.

Re claim 9, Lee further disclosed,
an analog-to-digital converter (228 of Figure 3) coupled to the microcontroller for delivering at least one analog signal to the microcontroller in digital format; and, a digital-to-analog converter (226) coupled to the microcontroller for converting at least one digital signal from the microcontroller to at least one analog control signal.

Re claim 12, Lee further disclosed,
wherein the secondary control system has at least three modes of operation, including: a first mode wherein an optical spectrum of the optical filter is adjusted based on data from the optical sensing device; a second mode wherein the optical spectrum of the optical filter is maintained based on the data received from the optical sensing device; and, a third mode wherein an attenuation profile is applied to the optical filter under command from a microprocessor (Figures 5A, 5B).

Re claim 16, Lee disclosed, setting an initial state of a control system for controlling the optical filter; setting an optical spectrum profile for the optical filter to either an initial profile or a stored profile (502, 504 of Figure 5A); compensating for ambient temperature changes (see e.g., col./lines: 1/55-60); and, initializing a power controller

for controlling the power applied to different elements of the optical filter.

Re claim 22, Lee disclosed, an optical amplifier (210 of Figure 3) coupled between the wave division multiplexer (206 of Figure 3) and the optical filter (212 of Figure 3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-4, 5, 6, 8, 10, 11, 13-15, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee US 6028697 A (Lee).

Re claims 2-4, Lee disclosed monitoring the output of the filter and illustrated the sensing device as a photodiode. Given that the system is functional to alter the center wavelength and sense the corresponding output to the filter, the system operates as a monitor, spectrum analyzer and wave meter. It would have been obvious to one ordinary skill in the art at the time of invention that these are all functionally the same type of element/method.

Re claims 5, 6, 8, 10, 11, 14, 20 Lee disclosed, wherein the optical sensing device

monitors the output current of the at least one filter element, see col./lines: 7/45-50. Lee does not disclose measuring and controlling the voltage or power of the filter element. However, It would have been obvious to one ordinary skill in the art at the time of invention that in measuring current, a circuit by proxy also measures the voltage and by controlling the current of a device, its corresponding voltage is affected as well as power. These are properties are directly proportionally related thru Ohms law.

Re claim 13, Lee disclosed, an optical filter coupled to an optical amplifier (Figure 3); monitoring the output of the optical amplifier (216); providing feedback to a secondary control system coupled to the optical filter, said feedback indicating an output voltage of at least one element of the optical filter. Lee does not disclose transmitting a signal from an optical filter to an optical amplifier, in that order. It would have been obvious to one of ordinary skill in the art at the time of invention to arrange the parts in order from filter to amplifier so that gain could be evened out prior to amplifying a central wavelength. However, in either order the same results will occur.

Re claim 15, Lee does not disclose the filter as a plurality of elements. It would have been obvious to one of ordinary skill in the art at the time of invention to construct the filter a number of discrete elements so that they could be individually controlled and removed from the circuit. Making parts separable is not patentable over the prior art.

Re claim 21, Lee disclosed,
Lee disclosed a wave division multiplexer (206 of Figure 3), said wave division multiplexer selectively transmitting a plurality of optical signals to an optical filter (212); an optical amplifier coupled to the optical filter (210); an optical sensing device coupled

to the optical filter (216); and, a secondary control system coupled to the optical sensing device and the optical filter (224). While Lee does not show a plurality of optical transmission lines leading into the multiplexer it would have been obvious to one ordinary skill in the art at the time of invention to construct the circuit in that manner as this is the most common depiction of the device and furthermore, multiplexers are typically used to combine optical signals from different waveguides onto a single waveguide.

7. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee US 6028697 A (Lee) in view of Roberts US 5513029 A (Roberts).
   Re claim 17-19, Lee does not disclose thermal crosstalk, thermal resistance and coolers between the elements of the filter.
   Roberts disclosed using thermal coolers and the crosstalk in WDM system, see col./lines: 9/40-55, 13/35-50. It would have been obvious to one ordinary skill in the art at the time of invention to that any optical element in a WDM system is subject to thermal resistance which will in return cause variation in wavelength and channel crosstalk which is then best alleviated by a thermal electric cooler. Thermal rise and signal degradation is common to all optical systems.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

David C. Payne
Patent Examiner
AU 2633